

A NEW GENUS AND SPECIES OF THE FAMILY CONGROGADIDAE (PISCES: PERCIFORMES) FROM THE WESTERN INDIAN OCEAN

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A B S T R A C T

A new genus and species of the perciform fish family Congrogadidae from a depth of 140 m off Kenya (western Indian Ocean) is diagnosed, described and figured. The new taxon appears to be the most generalized member of the family to be discovered.

Examination of materials for a revision of the perciform fish family Congrogadidae has resulted in the discovery of two specimens representing a new genus and species. These specimens possess a large number of characters I believe to be primitive for the family. A detailed phylogenetic analysis of the Congrogadidae (based on osteology and myology) is in progress, but the new taxon is described here since it will be some time before the anticipated revision can be completed.

Congrogadids were initially thought to exhibit ophidioid affinities (Richardson, 1843; Günther, 1871; Jordan and Fowler, 1902) but later opinions placed them more and more firmly among the blennioid fishes (Regan, 1912; Norman, 1966). Smith (1952: 87) suggested a "spariform" relationship on the basis of upper jaw morphology. More recently, Gosline (1966: 100) has remarked on certain anatomical peculiarities shared with some serranoid fishes [in particular the Pseudochromidae—although Gosline (1968) retains the congrogadids in the blennioids], and Springer (in lit.) has explicitly suggested pseudochromid affinities (and possibly affinities to the true clinids) to me on the basis of another apparently synapomorphous character. The morphometric and meristic attributes of the new taxon appear to ally it (and hence, presumably, all congrogadids) with *Anisochromis* of the pseudochromids (as recognized by Springer et al., 1977). However, since the phylogenetic implications of such an alignment would destroy the presumed monophyletic nature of the pseudochromids and reduce the hierarchical status of the Congrogadidae as presently recognized, this suggestion will not be made formally until evidence from more trenchant anatomical areas (osteology, myology) can be presented for evaluation, and can be interpreted as refuting or corroborating suggested anisochromine relationships. [G. D. Johnson has informed me of a synapomorphy in cranial muscles linking *Anisochromis* with pseudochromids that is not present in congrogadids.]

Although four suprageneric names have been proposed (Congrogadina, Günther, 1862: 388; Haliophidae, McCulloch 1915: 55; Blennodesminae, Smith, 1952: 87; and Halidesminae, Smith 1952: 87) I prefer not to recognize any subdivisions of the Congrogadidae at this time. Subdivisions are envisaged on completion of the phylogenetic analysis, which will hopefully allow monophyletic taxa to be proposed.

The new genus is placed in the family Congrogadidae because (amongst other reasons) of the lack of any anal spines, a single dorsal spine not (or barely) attached to the base of the first dorsal fin ray, lack of palatine teeth, and single spur-like opercular spine.

Rusichthys new genus

Type species.—Rusichthys plesiomorphus new species.

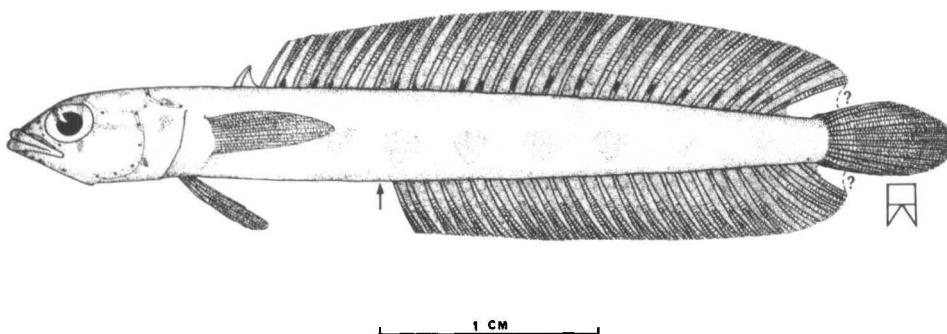


Figure 1. *Rusichthys plesiomorphus* new genus and new species. Left lateral view of holotype (USNM 218163, 37.8 mm SL). Color pattern composite of both sides of holotype and paratype, dorsal and anal fins artificially figured as though unbroken and extended.

Diagnosis.—*Rusichthys* differs from all other congrogadids in the low dorsal and anal fin ray counts (32–33 vs. 45–77 and 26–27 vs. 36–65, respectively). It has more pectoral fin rays (14 vs. 9–12¹) and pelvic fin rays (4 vs. 0–3¹) with the former fin about 70% and the latter 56–62% head length. It may be further distinguished in that there are only four (vs. 6–7) suborbital sensory canal pores, and in the absence of the medial (pair of) parietal pore(s).

Etymology.—Named from the acronym RUSI (Rhodes University, Smith Institute) and *ichthys*, a fish, in recognition of the tremendous contribution to western Indian Ocean ichthyology made by the late J. L. B. Smith, and by Mrs. M. M. Smith (presently director of the J. L. B. Smith Institute of Ichthyology and the staff and students of the Smith Institute, Rhodes University, Grahamstown, South Africa). Gender: masculine.

***Rusichthys plesiomorphus* new species**
Figures 1 and 2

Holotype.—USNM 218163, 37.8 mm SL (43.4 mm TL), Indian Ocean off Kenya (02°42'S, 40°53'E), ANTON BRUUN Cruise 8, Sta. 420A, 140 m, GMT shrimp trawl, 6 Nov. 1964.

Paratype.—USNM 218164, 41.0 mm SL, collected with the holotype. Specimen now cleared, stained and dissected.

Diagnosis.—As for genus.

Description.—A short, small (41.0 mm SL maximum recorded length) congrogadid presently known from two specimens taken off the Kenyan coast. The following counts and measurements are given for the holotype, with values for the paratype following in parentheses. As percent standard length: soft dorsal-fin base 65.3 (67.3); anal-fin base 51.3 (51.0); snout tip to dorsal-fin spine origin 28.0 (28.3); snout tip to first dorsal-fin ray origin 31.2 (30.5); snout tip to anal fin origin 47.4 (50.0); head length 21.4 (21.5). As percent head length: head depth at parietal

¹ Includes information from a new genus and species from the Malagasy Republic to be described by Dr. L. A. Maugé of the Museum National d'Histoire Naturelle, Paris.

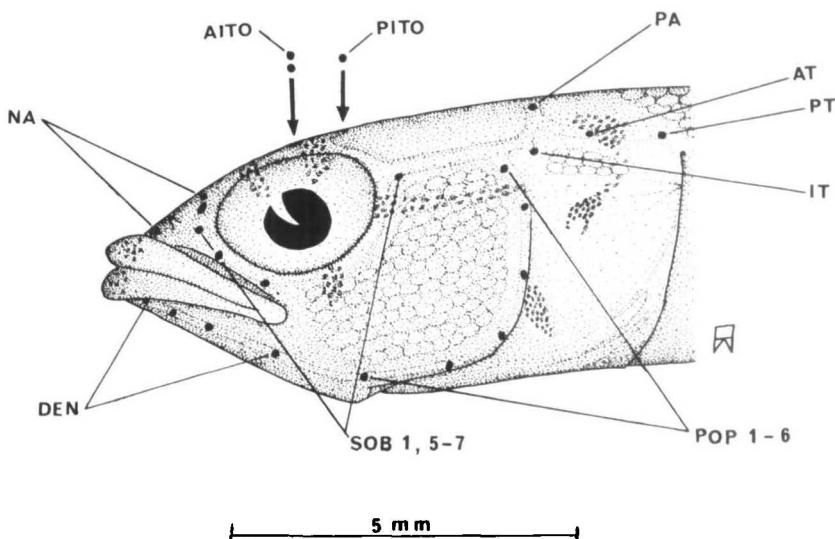


Figure 2. *Rusichthys plesiomorphus* new genus and new species. Left lateral view of head of holotype (USNM 218163, 37.8 mm SL) to show sensory canal pores, pigment distribution, and scalation (extrapolated from scale pockets). Abbreviations: AITO = anterior interorbital, AT = anterior temporal, DEN = dentary, IT = intertemporal, NA = nasal, PA = parietal, PITO = posterior interorbital, POP = preopercular, PT = posterior temporal, and SOB = suborbital.

commissure 48.1 (46.6); body depth at anal-fin origin 49.4 (48.9); eye diameter 27.2 (26.1); snout length 21.0 (20.5); bony interorbital 6.2 (5.7); upper jaw length 49.4 (52.3); pectoral fin length 71.6 (71.6); pelvic fin length 61.7 (56.8); first dorsal fin ray 28.4 (damaged); ninth 45.7 (39.8); eighteenth 50.6 (46.6); penultimate 51.9 (45.5); first anal fin ray 29.6 (29.5); ninth 40.7 (39.8); eighteenth 40.7 (40.9); twenty-fifth 45.7 (44.3).

Dorsal fin I, 32 (I, 33), only first ray unbranched; anal-fin 27 (26), all rays branched; pectoral fin 14; pelvic fin I, 4; caudal fin four procurent and five principal dorsal rays, and three procurent, five principal ventral rays (paratype only). Caudal fin rays include segmented and unsegmented elements, all other fin rays are segmented.

Sensory canal openings (Fig. 2—all pores bilateral except where stated otherwise): nasal double, with one just behind upper lip and other just behind posterior nostril; an anterior interorbital and single median posterior interorbital pore. Four suborbital pores (corresponding to numbers 1 and 5 through 7 of other congrogadids); six in preopercular canal; four in dentary. One intertemporal; anterior and posterior posttemporal; and single parietal pore on each side of midline. Medial pore (or pair of pores) in parietal commissure (=supratemporal canal) which lies in (or on either side of) midline in other congrogadids is (are) absent (Winterbottom, 1978: fig. 2).

Gill membranes fused to each other in ventral midline, but free of isthmus. Six branchiostegal rays; gill rakers on first arch with 2 epibranchial, 1 in angle, and 4 ceratobranchial = 2 + 1 + 4 (paratype only). Olfactory capsule with two nostrils, anterior a short tube, posterior pore-like. Cheek fully scaled with triangular patch of scales on opercle just above single opercular spine. Rest of head naked.

Body covered with small, elliptical cycloid scales (deduced from the few scales remaining). A small, dorsal pseudobranch present. No swim bladder.

Single chevron-shaped row of teeth on vomer, none elsewhere on palate. Teeth in jaws small, conical with rounded tips; both jaws with inner patch of smaller teeth at symphysis. Characters which could not be examined owing to the condition of the specimens were the nature and number of the lateral line scales, and the arrangement of the body scales—the above comments concerning extent of scalation are deductions from the scale pockets remaining in the skin. It is not clear whether the last dorsal and anal fin rays were joined to the caudal peduncle and/or caudal fin by membrane, or whether they remained separate. A small amount of membrane is present at the posterior bases of the last fin rays of both fins in the paratype (Fig. 1). Color pattern (preserved specimens—description derived from a composite of left and right sides of both specimens). Pale yellow-brown ground color. Lips with a faint vertical stripe anteriorly. Four dusky bars radiating from eye—two dorsal, one ventral (short), and a longer posterior bar reaching upper margin of the preopercle. Diffuse group of pigmented cells just postero-dorsal to anterior posttemporal sensory canal pore, another overlying shaft of opercular spine about midway along opercle length and third in region of opercle/subopercle junction just posterior to preopercle. Body with indeterminable number (8–10?) of vaguely triangular blotches along sides, with bases of triangles dorsally. Blotches lie primarily below lateral septum, become fainter posteriorly. Some dorsal-fin ray bases with dark spot (holotype only).

Etymology.—Named from the word *plesiomorph* (*sensu* Hennig, 1966), meaning primitive or relatively primitive, for the group to which the organism belongs, in allusion to its presumed generalized meristic and morphometric values for a congrogadid.

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